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Original Research Article

A study to assess the knowledge of female medical students on polycystic ovary syndrome in NRI Institute of Medical Sciences

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ABSTRACT

Background: Polycystic ovary syndrome (PCOS) is a hyperandrogenic disorder with an approximate prevalence of 15% to 20%; despite being a common disease in women, an estimated 68% of the total cases remain undiagnosed. Long-term consequences of PCOS on psychological health have been underestimated and disregarded. Even though the disorder has a wide spectrum of symptoms affecting a female's life from early teenage to later in life, it is not given as much importance as other chronic diseases like diabetes mellitus, hypertension, or a thyroid disorder. The need to address this syndrome both as a burden to the healthcare system, as well as on an individual basis right now, is of paramount importance. Previous studies have found that there was a gap in the knowledge of medical students about PCOS and its symptoms and signs, and that lifestyle preferences may predispose to PCOS. Delay in the diagnosis of PCOS may lead to metabolic and reproductive abnormalities associated with it. This study was mainly aimed at assessing the knowledge of female medical students on PCOS in NRIIMS, Sangivalasa.
Methods: This was an online questionnaire based cross sectional study conducted on 550 female medical students of NRIIMS from March 2022 to September 2022 after taking approval from the institute ethics committee. The completely filled questionnaires (500) were analysed for the results.
Results: In the present study though the female medical students had good knowledge regarding the causes and risk factors associated with PCOS, their knowledge about the complications of PCOS was found to be significantly less. The main source of knowledge regarding PCOS was from the treating doctor and browsing the internet being the next source.
Conclusions: Effective educational intervention can significantly increase the level of knowledge on PCOS in female medical students.

Keywords: PCOS, Medical students, Menstrual abnormalities

INTRODUCTION

PCOS was originally delineated in 1935 by Leventhal and Stein. According to the Rotterdam consensus, PCOS diagnosis should be based on the presence of any two of the following three criteria: irregular menstruation i.e. oligomenorrhea and/or anovulation; clinical and/or biochemical evidence of hyperandrogenism; and ultra-sonographic evidence of polycystic ovaries.[1] It is a hyperandrogenic disorder with an approximate prevalence of 15% to 20%; despite being a common disease in women, an estimated 68% of the total cases remain undiagnosed.[2] At least a third of women reported

visiting multiple clinicians before a diagnosis is established.[3]

Late diagnosis and no timely measures increase the risk of progressing to avoidable, adverse consequences associated with the syndrome. As many as 30% of adolescent females with PCOS are at risk of metabolic syndrome.[4] Another study estimates around 40% of females with PCOS would suffer from diabetes mellitus by their 50's.[5] Women with PCOS have three-to-four-fold times increased risk of developing early-onset endometrial cancer.[6] In addition to the physical concerns, women with PCOS have eminent physiological distress. A Brazilian research study concluded that 58% of women with PCOS exhibited at least one psychiatric disorder.[7]

Long-term consequences of PCOS on psychological health have been underestimated and disregarded.[8] Even though the disorder has a wide spectrum of symptoms affecting a female's life from early teenage to later in life, it is not given as much importance as other chronic diseases like diabetes mellitus, hypertension, or a thyroid disorder. The need to address this syndrome both as a burden to the healthcare system, as well as on an individual basis right now, is of paramount importance.[9] It remains an underdiagnosed condition despite the fact that it represents the most common endocrine syndrome in women of reproductive age.[10,11]

Previous studies have found that there was a gap in the knowledge of students about PCOS and its symptoms and signs, and that lifestyle preferences may predispose to PCOS.[13] Delay in the diagnosis of PCOS may lead to metabolic and reproductive abnormalities associated with it.[12] Other studies have found that the prevalence of having signs and symptoms of PCOS was on the increase without a change in the level of awareness among female students, even though many of them had suffered from the syndrome. In addition, most of the students do not visit their doctors when suffering from PCOS symptoms and signs.[14,15] This study was mainly aimed at assessing the knowledge of female medical students towards PCOS in NRIIMS, Sangivalasa.

METHODS

This was an online questionnaire based cross sectional study conducted on the female medical students from NRIIMS college from March 2022 to September 2022 after taking approval from the institute ethics committee.

Inclusion criteria

All the female medical students above 18 years of age were included.

Exclusion criteria

Male students were excluded from the study.

The survey was conducted among the 550 female medical students of all years of NRIIMS, Sangivalasa by consecutive sampling after taking the informed and written consent. A semi-structured questionnaire with 15 questions containing 3 components was used for the study: knowledge about risk factors (obesity, sedentary life style, lack of physical exercise, junk food intake, familial inheritance), clinical symptoms and signs (menstrual irregularities, acne, hirsutism, acanthosis nigricans, infertility) and complications (metabolic syndrome, dyslipidaemia and coronary artery disease, endometrial cancer, diabetes mellitus, psychological upset) of PCOS was used for online data collection.[16]

The completely answered questionnaires were taken for data analysis. We had received about 500 completely answered questionnaires and thus the results were analysed. The data was collected and analysed through descriptive analysis as percentages after entry into Microsoft excel sheets.

For each question the options of yes and no were given. For example: Do you know that obesity is a cause for PCOS-Yes/No.

For every correct answer one mark was awarded and thus we have anaysed the knowledge basing on the scoring system out of 15.

0-5 was poor knowledge about PCOS; 6-10 was better or moderate knowledge about PCOS and 11-15 was good knowledge about PCOS.

RESULTS

Among 550 participants, 500 students responded completely to the online questionnaire. The study group mostly belonged to age group of 18-23 years. Most of the students belonged to middle income group (76%) (Table 1). High knowledge scores were observed in people belonging to high income group (82%).

Most of the students (85%) claimed that PCOS is the most common problem in women of reproductive age group.

The knowledge about the risk factors for PCOS is illustrated in Table 2. Regarding the knowledge about the risk factors, 85% of students were aware of obesity as the risk factor, 82% of the participants knew that sedentary life style and 76% knew that lack of physical exercise can increase the risk for PCOS. 72% of the students accepted that junk food intake is associated with PCOS. Only 21% of the participants had the knowledge about familial inheritance of PCOS.

Table 3 shows the knowledge about clinical presentation, signs and symptoms of PCOS. On analysing the knowledge about the clinical presentation, 76% responded as menstrual irregularities, 25% had

knowledge about hirsutism (abnormal male type of hair distribution, unwanted hair) only 6% had knowledge about acanthosis nigricans (dark coloured patches over nape of the neck). Most of the participants (74%) knew that PCOS can cause infertility.

Table 1: Distribution of the study participants on the basis of socio-demographic details.

Socio-demographic data	N (%)
Age groups (years)	
Less than 18	20 (4)
18-21	330 (66)
21-23	150 (30)
Socio-economic status	
High	110 (22)
Middle	380 (76)
Low	10 (2)

Table 2: Knowledge regarding risk factors for PCOS.

Risk factor	Yes (%)	No (%)
Obesity	85	15
Sedentary life style	82	18
Lack of physical exercise	76	24
Intake of junk/fast foods	72	28
Familial inheritance/genetical	21	79

Table 3: Knowledge regarding signs and symptoms of PCOS.

Signs and symptoms	Yes (%)	No (%)
Menstrual irregularities	76	24
Acne	62	38
Hirsutism	25	75
Acanthosis nigricans	6	94
Infertility	74	26

Table 4: Knowledge regarding long term complications of PCOS.

Complications of PCOS	Yes (%)	No (%)
Metabolic syndrome	2	98
Dyslipidaemia/abnormal cholesterol levels and coronary artery disease	54	46
Endometrial cancer	6	94
Diabetes mellitus	68	32
Psychological upset	3	97

Knowledge about the long-term complications associated with PCOS among the study participants is shown in Table 4. In view of knowledge on long term complications, 68% of students were aware about diabetes mellitus, 54% of students knew about dyslipidaemia and risk for coronary artery disease and only 6%, 3% and 2% of the respondents were aware about endometrial cancer, psychological upset and metabolic syndrome respectively. However almost all of them knew that the life style modification is the first line of management in PCOS.

Table 5: Source of information regarding PCOS.

Source of information regarding PCOS	%
Doctor	63
Internet	35
Friends/relatives	2

Coming to the source of knowledge regarding PCOS the main source was from the treating doctor (63%), next source being the internet (35%) and remaining 2% from their friends and relatives (Table 5).

DISCUSSION

Despite the evidence of the deleterious effects associated with PCOS, the delay in diagnosis due to lack of awareness still remains an issue.[13,17] A Saudi study showed that two thirds of 350 female participants (66.3%) had inaccurate knowledge about the risks of PCOS due to a lack of discussions regarding reproductive health in schools and families.[18] This may be attributed to the fact that reproductive health topics are not usually included in school curricula and the absence of easy access to resources. In this study, 92.1% of respondents felt that spreading awareness about the syndrome was important.

Knowledge acquired throughout university years was a better predictor than years of life, and was associated with higher awareness levels. In this study, those who were in their final year of medicine had the highest awareness scores. This can be attributed to the fact that the more the number of years spent at university the more students will be exposed to awareness campaigns, patients and off-campus lectures thus leading to higher knowledge levels. This finding was in line with a recent study about PCOS awareness in Jordan.[19]

Another study conducted in Saudi Arabia concluded that the level of knowledge of PCOS was significantly proportional to higher educational level.[20]

In the present study those who had higher monthly income scored significantly higher in comparison to those with a lower income. These findings were similar to the study conducted in Iran to investigate the relationship between socioeconomic status and oral cancer awareness in adults.[21]

Approximately 90-95% of anovulatory women presenting to infertility clinics had PCOS.[22] In the present study, most participants were aware of menstrual abnormalities and infertility as common clinical presentation. Similarly, irregular menstrual cycle was the most commonly reported clinical feature in a study by Piltonen et al followed by obesity and infertility.[23] The most commonly

reported comorbidities were reduced fertility, type 2 diabetes, gestational diabetes, insulin resistance, and cardiovascular disease risk factors.[23] In the present study the most common co-morbidities were found to be diabetes mellitus and coronary heart disease.

The next most commonly reported symptom among our participants was acne, which may be more of a cosmetic observation than a clinical symptom and was relatively common in adolescents and young adults. In addition, high knowledge scores were observed among those who reported having menstrual irregularities whereas the least common symptom to be reported was hirsutism followed by acanthosis nigricans. It seemed that the menstrual abnormalities and cosmetic signs of PCOS were more likely to prompt patients to probe into knowing more and to seek advice.

Regarding the sources of knowledge regarding PCOS in this study, the highest percentage of participants got their knowledge from the treating doctors and next being the sources from internet. These findings were similar to other studies in which doctors were found to be the main source of information about PCOS.[19]

The limitation of this study was being a cross sectional study with a convenience sampling technique using a newly developed questionnaire and scoring system. Score validation system may be required.

CONCLUSION

Even though the female medical students had good knowledge regarding the causes and risk factors associated with PCOS, their knowledge about the complications of PCOS was found to be significantly less. Effective educational intervention can significantly increase their level of knowledge on PCOS.

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